# MOOCs - the promise of meeting the need of flexibility for the adult learner?

Buhl, Mie; Andreasen, Lars Birch

*Published in:*
Proceedings of the 15th European Conference on E-learning ECEL 2016

# MOOCs: The Promise of Meeting the Need of Flexibility for the Adult Learner?

**Mie Buhl[1] and Lars Birch Andreasen[2]**
**[1]Department of Communication, Aalborg University, Denmark**
**[2]Department of Learning and Philosophy, Aalborg University, Denmark**
mib@hum.aau.dk
lba@learning.aau.dk

**Abstract:** In line with the emergence of MOOCs, the expectations of students' ability to conduct their own learning processes emerged emphasising the advantages of flexibility in time and space; a promise of meeting the needs for the adult learner (Knowles, 1972). In this paper we discuss which student roles emerge from this setting. In previous work, we pointed out challenges regarding teacher roles and how different knowledge domains influence the educational design of learning activities (Andreasen and Buhl, 2015). Reflecting on preliminary results from an international collaborative research project on MOOCs in Asia and Europe, we noted that many of the examined MOOCs were developed in relation to national issues of solving local educational challenges combining local instructional designs with the overall vision of user flexibility. Online learning activities has often in general been divided between either facilitating communities of learning or supporting individual and independent study, but initiatives of combining these approaches are evolving (Anderson, 2008). Likewise, the concepts of e.g. instructional design, didactic design, and learning design have different roots, but may in their current use overlap and offer new possibilities of thinking educational development (Mor et al., 2015). This paper further examines the diversity of learning activities in MOOCs, with an empirical basis in 12 case studies on MOOCs in Asia and Europe (Kim, 2015) pointing at how instances of 'self-directed learning' are orchestrated in various ways?

**Keywords:** self-directed learning, MOOCs, learning design, flexibility, adult learner

## 1. Introduction

This paper addresses the difficulties of designing for learning in ways that actually support the learners' activities in large scale courses like MOOCs, massive open online courses. Many activities in MOOCs look similar to e-learning activities, and many questions of curriculum, learning designs can be dealt with from similar theoretical approaches. However, by being massive, MOOCs make a significant difference. The upscaling of classical pedagogical questions of the what?, the how?, the why?, and not least the whom? to work for an audience of thousands of potential learners with different languages, different educational backgrounds, and different learning cultures, adds a new perspective to the pedagogical discussions of e-learning. Furthermore, an approach that focuses on how to engage with MOOCs on a governmental level nationally in order to find a solution to a huge educational challenge of the population, is different from an approach where a business model of MOOCs is the main effort behind the course design. Both of these approaches as well as those in-between promise the learner flexibility - like previous e-learning models have done over the years.

In line with the emergence of MOOCs, the expectations of students' ability to conduct their own learning processes emerged emphasising the advantages of flexibility in time and space; a promise of meeting the needs of the adult learner, like Knowles (1972) already stated years ago. But how can student participation actually be practiced in MOOCs, when learning experiences gained from previous education are placed in a large scale setting of a digital learning environment? This paper discusses the kind of student roles that emerge from this setting. In previous work, we pointed out challenges regarding teacher roles and how different knowledge domains influence the educational design of learning activities (Andreasen and Buhl, 2015). Reflecting on preliminary results from an international collaborative research project on MOOCs in Asia and Europe, we noted that many of the examined MOOCs were developed not with a global orientation, but in relation to national issues of solving local educational challenges combining local instructional designs with the overall vision of user flexibility. Similar to the identified 'c'- and 'x'-divide in relation to MOOCs (reflecting a mainly 'connectivist' or 'behaviourist' approach), online learning activities has often in general been divided between either facilitating communities of learning or supporting individual and independent study, but initiatives of combining these approaches are evolving (Anderson, 2008). Likewise, the concepts of e.g. instructional design, didactic design, and learning design have different roots, but may in their current use overlap and offer new possibilities of thinking educational development (Mor et al., 2015).

This paper further examines the diversity of learning activities in MOOCs, empirically based on 12 case studies on MOOCs in Asia and Europe (Kim, 2015). Our main focus is what the promise of MOOCs is to the learner when suggesting flexibility in time, space and pace as an attractive alternative to conventional settings of education?

## 2. Theoretical approaches

Drawing on a concept of self-directed learning, theories from Knowles and further developments are discussed, emphasising as well learner autonomy as the learning context, bearing in mind that self-directed learning requires support, e.g. through various approaches to learning design.

### 2.1 The adult self-directed learner

When Knowles introduced his ideas of the self-directed learner (e.g. 1972), he predicted an educational development which has later become huge: lifelong learning. Though he mentioned computing as a developed skill of the adult learner, Knowles could not predict the direction computer-based education has taken. What he addressed in his working paper was three assumptions: *the first assumption* dealt with which competences the adult needed for performing the various roles in life. He proposed a first draft of a taxonomy that included the roles of the adult as: a learner, being a self, a friend, a citizen, a family member, a worker and a leisure-time user. To engage in that, *the second assumption* was that the ultimate behavioural goal of schooling would be that: "the individual engages efficiently in collaborative self-directed inquiry in self-actualizing directions" (Knowles, 1972, p. 4). The ability to do that derived from seven skills including: the ability to develop curiosity; the ability to formulate questions; the ability to identify required data and locate and select relevant and reliable sources; the ability to organise, analyse, and evaluate data and generalise, apply and communicate the answers to the questions raised (ibid). *His third assumption* was that the goal of schooling would best be reached by organizing the curriculum as series of individual or collaborative learning projects, and by the school being understood as a "learning resource center" and the teachers as "learning project consultants" (Knowles, 1972, p. 5).

Knowles suggested that this spiral of learning projects throughout schooling would gradually mature the learner from an early stage of roles like friend, family member, and leisure-time user with an increasing complexity towards the unique self, citizen and worker. His idea was that the learner would gradually become more and more proactive and widen her circles into the community. He finalised his visualisation of the learner by describing the roles of the learning project consultant (i.e. the teacher) as the analyser of the learning experience. This should support the learner in becoming more and more self-directed - not motivated by graduation or formalised in adult education. There would be only lifelong education. More than 25 years later the results of his further elaboration on the subject (Knowles et al., 1998) showed refined descriptions of what has become core principles in andragogy: the learners' need to know, self-directed learning, prior experience of the learner, readiness to learn, orientation to learning and problem solving, and motivation to learn. These principles reflect the adult learner's personal autonomy as the goal for educators to facilitate, which refers to the three assumptions proposed in his working paper (Knowles, 1972), but are maybe more oriented towards a professional competence perspective than a personal competence. Knowles' vision of the self-directed learner in a lifelong perspective from 1972 has the beauty of being holistic and driven by intrinsic motivation. It shows certain parallels to the visions of the connectivist cMOOC movement where the world became the never ending possibility of net-based "widening communities". His vision of teachers as "learning project consultants" conjures associations to a MOOC crew of learning designers, the supporting tutors/teaching assistants and technical supporters offering curricula and organised facilities for interaction and evaluation.

Knowles' three assumptions could be recognised as the content of a lifelong learning design: what should be learned, how it should be learned and why it should be learned. But his vision is based on the starting point that the ability of being self-directed should gradually be implemented from the early years in order to prepare the learner to be 'self-propelled'. This may be helped along through the scaffolding of the learning consultant who in Knowles' perspective is a person who evaluates and diagnoses the next steps of progression and over time withdraws from this role and hands over this competence to the learner herself. Knowles' ideas of maturing may give associations to Piaget's cognitive models of development, and his spiral to Bruner's spiral curriculum theory; both authors are some of the theoreticians he refers to in his working paper; and relevant criticism of this idea of linear maturing can be made from the perspective of social constructivism. Newer perspectives made by his successors (Knowles et al., 1998) point at the learners' diverse prerequisites as an obstacle to attain the necessary personal autonomy for a self-directed learning progression. However, Knowles' take on academic

progression as an ability that should both be embodied and trained over time including the practice of divergent and analytical thinking, may add valuable contributions to elaborate on current methodic suggestions of self-directed learning.

In newer discussions of self-directed learning, both learner autonomy and the learning context are seen as important components of self-directed learning. Paul Bouchard examines the various factors that constitute self-directed learners' autonomous learning strategies (Bouchard, 2009). However, as Garrison notes, looking only at the dimension of learner autonomy is not sufficient when understanding self-directed learning, especially in relation to implementing self-directed learning in an educational setting (Garrison, 1997, p. 18). Bouchard also highlights – apart from the autonomy of the learner – both the learning environment, the learning context, and the connections people make while learning as decisive factors for the success of self-directed learning journeys (Bouchard, 2009). Complex tasks such as formulating goals, or finding appropriate resources, can easily become overwhelming for the unprepared, and Bouchard points out that self-directed learning should be supported. We should not be "expecting from employees that they know without providing appropriate support for acquiring the knowledge" (Bouchard, 2009, p. 18). Thus, self-directed learning is not only a question of the autonomy to choose between already laid-out tasks, but to use various tasks and activities in supporting the learner's critical thinking and meaning-making: "An adult learner who is fully self-directed has moved beyond simple task control and has learned to think critically and construct meaning in ill-defined and complex content areas" (Garrison, 1997, p. 21).

In a study on self-directed learning especially in relation to Massive Open Online Courses, Kop and Fournier investigated which challenges and opportunities self-directed learners face when participating in connectivist learning environments (cf. cMOOCs), and found that these environments add new dimensions to the understanding of self-directed learning. These new dimensions comprise among other things the ability to thrive in a changing and chaotic environment with an overwhelmingly amount of possible resources (Kop and Fournier, 2010, p. 17). "Agency and activity are required in an autonomous learning environment, but it was clear that learners have their own ideas on what type of activities would suit them and their lifestyles, which might not necessarily be the same as those of the course organizers" (Kop and Fournier, 2010, p. 16). In the studied case, a large group of silent participants who did not produce artefacts nor participate extensively in discussions, nevertheless felt that they were actively engaged in the course through other activities like aggregating information, relating it to earlier experiences ('remixing'), and sharing it with others.

Seeing learning as a change process, Kop and Fournier notes in relation to the level of students' participation in MOOC activities, that "novices might need more time for this change process to occur, especially in relation to building self-confidence and a sense of community in such a large course" (Kop and Fournier, 2010, p. 13).

Kop and Fournier argue, in line with Bouchard's points above, that advocating self-directed learning is not synonymous with depending solely on the learners' immediate choices. In order to succeed, self-directed learners need facilitation and support for their self-directed learning processes: "Heightening the level of engagement and active participation is one of the main challenges of learning in an open networked environment and one in which educators could play a role" (Kop and Fournier, 2010, p. 17). What should be kept in mind is that the learning context may invite to learners' engagement and participation in various ways. As D.R. Garrison points out, "[t]he challenge for teachers is to create the educational conditions that will facilitate self-direction" (Garrison, 1997, p. 30).

Knowles' approach to self-directed learning (Knowles, 1972) is based on knowledge creation as an active inquiry building on question processing skills and searching for relevant sources to answer the questions. We argue that his proposed flexibility refers to self-directedness in the process of knowledge creation. We further argue that this approach differs from seeing self-directedness only in the meaning of flexibility in time, space and pace. We assume that this differentiation may have implications for the extent to which MOOC participants are capable of completing a course. The development of the ability to actually act and learn on the basis of a chosen direction of decisions connected to knowledge creation is a highly complex and delicate ability, which must be developed over time supported by a professional educational consultant (in Knowles' terms: a learning project consultant). The origin of self-direction occurred in a pre-MOOC context where the consultancy would be conducted face-to-face and in a local physical environment. Our analysis of the 12 cases below aims to reveal the various orchestrations of self-directed learning and how the students' activities are scaffolded and related to conceptions of learning design.

## 2.2 Conceptual approaches to learning design supporting learners

Drawing on issues from creating an e-learning environment, Anderson suggests that not one theoretical position may serve as the foundation for creating adequate learning situations (Anderson, 2008). Learning design may draw on different theoretical frameworks, and practical design decisions may be informed by that. From a theoretical point of view, identification of either behaviourist, cognitive, connectivist or social constructivist positions may be suitable to frame a MOOC, or to label a MOOC already designed. But from a position of the educator's scaffolding of learning activities suitable for the learners' prerequisites, it may not be a choice of either or. MOOCs urge us to discuss it from the large scale perspective where an automation of scaffolding activities are used to either organise, practice or evaluate the learner.

Still, there are conceptual ideas of the learner and the learning process that prescribes the underlying framing of learning objective. Mor et al. (2015) describes learning design as a many-faceted concept which develops along with conceptual developments of instructional design. The authors acknowledge the confusions among practitioners and researchers because the two concepts of learning design and instructional design at the outset represent different pedagogical ideas. While learning design refers to constructivist theory and connects to technology-enhanced learning in the 1990s and 2000s, instructional design refers to behaviourist theory and goes back to the Second World War, where a rapid training of technical skills for the production of war materials was needed. However, nowadays the concepts are developed and used in a manner where the two domains overlap, and the distinction between them seems difficult to maintain.

Along with the emergence of ICT, discussions of the relations between technology and didactics drawing on theoretical frameworks that emerge from the Nordic tradition, seeing technology as being more than an added tool, develop among scholars working with technology (e.g., Andreasen, Meyer and Ratleff, 2008; Holm Sørensen, Audon and Levinsen, 2010; Meyer, 2011), emphasizing the constructivist-pragmatic approach in a technological landscape, which expands and changes the perception of time and space as well as access to information and knowledge construction, the framing of social practices, and the conditions for societal think patterns.

Together with the suggested perspective in Mor et al. (2015), where the conceptual approaches of learning design and instructional design both offer overlaps and gaps in the literature, diverse vocabularies and terminologies rooted in different scientific traditions seem to be occupied with the same theoretical issues regarding planning and practicing education. The turning and shared point among the diverse suggestions "learning," "instructional," "educational," "didactic", etc., is their conceptual connection to *design*. From our point of view, the concept of design indicates a development where continental currents of didactics and Anglo-Saxon currents share issues connected to the theoretical as well as the operational part of education, which faces a set of new challenges (Buhl, 2016). Design indicates a paradigmatic shift in the role of the educator's conditions for reflecting on, choosing, and planning learning activities. With regard to MOOCs and the upscaling of learners addressed, the educator may have to involve other actors in her organizing processes; she will have to think of how learning processes can be facilitated without the actual presence of her as a teacher, and she may have to negotiate the succession of learning objectives with the learners; she may also have to plan learning activities for learners she will never meet with. In addition, she will have to decide how to induct students with diverse educational backgrounds into new scientific domains, etc.

# 3. Empirical data

The empirical data to be discussed in this paper are retrieved from a collaborative project reporting on educational challenges in relations to MOOCs (Kim, 2015). In the collaborative project, twelve mainly country-specific studies on the development of MOOCs were carried out, pointing out general tendencies as well as presenting specific cases. The following discussion builds on these reported studies, which represent diverse scientific communities and academic styles. Furthermore, the joined task of reporting on MOOC endeavours is approached in different ways. Still, we find that the cases provide ideas of flexibility in self-directed learning and how difficult a "one-fits-all" concept is to realize.

Considering the reported cases from one perspective, a MOOC is a governmental investment to increase the national level of education (India, Thailand, China, Korea, Philippines, Malaysia, Spain and Latvia). From another perspective MOOC is the next step in a technological evolution to enhance an ongoing development of open university offers, where MOOCs are regarded to be the new development (Korea, Thailand, Malaysia, Spain,

Japan). One case engages with MOOCs on a local level creating a course for another country (Denmark, with a MOOC aimed at Indonesian child-care-givers), while two other cases discuss MOOCs with regard to an ongoing endeavour of increasing the use of technology-enhanced learning in higher education as such (Latvia, Slovakia). The differences are not surprising taking into account the diverse educational conditions on a political as well as a practical level.

Our analysis of the cases is structured through four key questions which serve to inform the approach to the learning process from the perspective of the promise of flexibility. The questions are:

- How can student participation be practiced in the MOOCs?
- Which student roles emerge from these settings?
- Which diversity of learning approaches are presented?
- How are local instructional designs combined with the overall vision of user flexibility?

In the following, we will present how the key questions are actualised in the 12 cases.

### 3.1 How can student participation be practiced in the MOOCs?

The practice of student participation takes different forms in the cases. MOOCs seem to express a promise of increased interaction between students when engaging with learning activities. Several cases report on interaction as a new promising achievement emerging from MOOCs enhancing the students' learning processes. They are referred to as services available as "gathering places" (China), "social networking services" (Japan), but also as "discussion forums" and "focus groups" (Philippines, Malaysia, Denmark). The cases report no further elaboration on the theoretical basis for the ideas of practices of interaction apart from the Danish case which draws on Salmon's E-tivities approach to structure students' reflections through use of regular peer assessment activities. Thus, the reporting on interaction may represent activities ranging from Q&A's, quizzes, self-study activities implying a teacher or a system as the other part of the interaction process, as well as group discussions where students function as each other's peers.

A MOOC's up-scaled number of participants in one online community requires some sort of scaffolding to enhance social interaction forms for course learning (Bouchard, 2009). The Chinese case shows an interesting development where a gathering place across courses (for 40.000 learners) emerged from a student-initiated need for discussion *besides* the pre-planned course activities. This shows the necessity for facilitating the social part of learning, an assumption which is supported by a student/teacher evaluation in the Latvian case criticizing MOOC for the lack of interaction.

### 3.2 Which student roles emerge from these settings?

The promise of flexibility demands a student who possesses both scholarly skills to maneuver the digital learning content and learning paths and social skills to engage with other students. Bouchard (2009) points out that these are complex skills to achieve, and this will especially apply to novices who access a MOOC for the first time. The various cases report interpretations of the student role from the perspective of individuality and mostly aimed at responding to defined assignments followed by self-checks (Japan, Malaysia, Latvia, Slovakia). The Spanish, Danish and Philippine cases report peer activities and communication among students supplementing the individual activities. In all cases there are indications of a very individualized student profile and of an idea that flexibility equals first and foremost a temporal and spatial freedom to access learning resources. The cMOOC idea of establishing a collaborating community where students engage in learning (Andreasen and Buhl, 2015) cannot be traced in the reports. Most reports indicate the role of a student to be rather a *knowledge consumer* than a *knowledge producer*. Some cases report that students can study together, which is mostly described in terms of accessibility to communities where the students can take on an independent approach to work with knowledge generation drawing on the resources available.

### 3.3 Which diversity of learning approaches are presented?

Promising flexibility gives rise to expectations of offering a diversity of learning activities. MOOCs may promote not only a many-faceted range of resources for learning, but also many-faceted ways of learning. Most of the reported cases report on the diversity as a diversity of accessible resources through supplementing traditional written material with for instance video lectures (India, Malaysia, Denmark, Spain, Philippines, Slovakia, Latvia).

This is not surprising since video lectures may be seen as the obvious compensation for the traditional teacher. This also indicates that most MOOCs have not so far stimulated development of new learning activities. One might even suggest that they in some ways seem to step back to former conventional lecture forms and are unable to implement recent developments from e-learning programs facilitating more interactive learning forms. The upscaling of the number of students seems to be a constraint to learning activities beyond conventional ways of teaching. When the traditional teacher-student relation vanishes, this relation must find new forms. Knowles emphasized the relation between teacher and learner as the core for development of the skills to be self-directed. Results from an evaluation workshop in the Korean case show that the students need the practices of this relation and that they ask for a facilitation at all didactic levels: learning content, organisation of learning processes, moderation of interaction.

### 3.4 How are local instructional designs combined with the overall vision of user flexibility?

In consequence of the overall vision of user flexibility, most of the analysed cases focus on content organization and accessibility in time when describing learning designs. As Bouchard (2009) points out, complex tasks such as formulating goals, or finding appropriate resources, can easily become overwhelming for the unprepared, so that self-directed learning should be supported, and lessons are learned about how different facilitating and moderating strategies must be integrated in the learning design to make a successful e-learning programme (Anderson, 2008). Even though the relations between educator, student and content is the classic approach to issues concerning learning design, MOOCs in the studied cases seem to promote the content-organizing aspects (India, China, Japan, Korea, Malaysia, Latvia, Philippines, Denmark, Spain). The facilitation of how to approach the learning content, how to engage the student, and which ways to achieve knowledge are scarcely touched upon in the reports from the cases. The behaviourist idea of knowledge transmission is prevailing, and connectivist or constructivist ideas of learning appear only in three cases (Spain, Japan, Denmark). An interesting observation is the Japanese idea of the video lecturing teacher replaced by an avatar. Other observations are the idea of distributing the content development to different actors (Malaysia). The design of the learning situation revolves around content which refers to an idea of education as a material formation process (Klafki, 1985). It seems that the endeavour of appealing to the self-directed learner leaves reflection of the support of the learner (the educator) and the conditions of the learner behind.

## 4. Self-directed learner? Or self-directed learning? How can the need for flexibility be met?

From an overall discussion of the cases, the major challenge is the orchestration of self- directed learning processes in the sense addressed by Knowles (1972, 1998) and Bouchard (2009). Several reports address self-directed learning as a matter of choosing between resources or attain flexibility in time, space or pace (Korea, Malaysia, Philippines, Thailand, Slovakia). The expectations expressed in the cases towards the learners' capability to be one's own learning designer and being able to make the right content choices, selecting relevant literature and pose and work with relevant questions does not indicate a self-directed learner in the way Knowles envisioned it. Rather the cases indicate a learner that can choose between ready-made packages of instructions.

Knowles' idea of knowledge creation as an active inquiry of question processing skills and of searching for relevant sources to answer the questions cannot be traced in the reports, and the question of flexibility remains a flexibility in access to resources and a flexibility in time, space, and pace. Bouchard's (2009) and Garrison's (1997) emphasis on both autonomy of the learner, the learning environment, the learning context, and the connections people make while learning as decisive factors for the success of self-directed learning journeys are important issues when engaging with MOOCs. The studied cases expose the difficulty of dealing with the *upscaling* issue combined with a digital environment. So far the solution is found in drawing on ideas of self-direction in a way where the choices are choices of packages for knowledge transmission rather than resources for knowledge construction.

Anderson suggested that "a learner-centered context is not one in which whims and peculiarities of each individual learner are slavishly catered to" (2008, p. 47). Instead he argued that it is a context that meets not only the need of the learner, but the need of the teacher, the institution, and the society as such. He even suggested that it should be labelled learning-centred as opposed to learner-centred to emphasise that point. His argument may be further interpreted stating that learning should focus on knowledge construction and ways to achieve knowledge as a project of inquiry (cf. Knowles) rather than choosing firmed packages from the shelf. Perhaps his distinction may have potential for the discussion of self-directed learning as well. The promise of

flexibility lies not in the accessibility to a lot of opportunities, it lies in the capability to inquire and understand how to make use of the opportunities. Even though Kop and Fournier argue that learners have their own ideas on what type of activities that will suit them, and even though they experienced new ways of course participation, their study also showed that the process of engaging in a MOOC environment is chaotic and requires both self-confidence and community skills. Their study indicate what Knowles suggested in 1972: To be self-directed is the result of a long process which emerges over time from scaffolded practice.

## References


Anderson, T. (Ed.) (2008) *The theory and practice of online learning, 2nd ed.*, AU Press, Athabasca University, retrieved from http://www.aupress.ca/index.php/books/120146

Andreasen, L.B. and Buhl, M. (2015) "Understanding MOOCs Through Connectivist and Social Constructivist Approaches". In: A. Jefferies and M. Cubric (Eds.), *Proceedings of the 14th European Conference on e-Learning, ECEL-2015*, Academic Conferences Limited, Reading, UK, pp 34-41.

Andreasen, L.B., Meyer, B. and Ratleff, P. (Eds.). (2008) *Digitale medier og didaktisk design. Brug, erfaringer og forskning*, Danish University of Education Press, Copenhagen.

Bouchard, P. (2009) "Pedagogy without a teacher: What are the limits?", *International Journal of Self-Directed Learning*, vol. 6, no. 2, pp 13-22, retrieved from http://www.sdlglobal.com

Buhl, M. (2016) "Theory-generating practice. Proposing a principle for learning design", *Tidsskriftet Læring og Medier (LOM)*, vol. 9, no. 15, pp 1-21.

Garrison, D.R. (1997) "Self-directed learning: Toward a comprehensive model", *Adult Education Quarterly*, vol. 48, no. 1, pp 18-33.

Holm Sørensen, B., Audon, L. and Levinsen, K. (2010) *Skole 2.0,* Klim, Århus.

Kim, B. (Ed.). (2015) *MOOCs and Educational Challenges around Asia and Europe,* KNOU Press, Seoul.

Klafki, W. (1985). *Dannelsesteori og didaktik. Nye Studier* [org.: Neue Studien zur Bildungstheorie und Didaktik], Klim, Aarhus.

Knowles, M.S. (1972) *Toward a Model of Lifelong Education*, Working paper for Consultative Group on 'Concept of Lifelong Education and Its Implications for School Curriculum', UNESCO, Institute for Education, Hamburg.

Knowles, M.S., Holton, E.F., and Swanson, R.A. (1998) *The Adult Learner: The definitive classic in adult education and human resource development*, 5th ed., Gulf Publishing Company, Houston.

Kop, R. and Fournier, H. (2010) "New dimensions to self-directed learning in an open networked learning environment", *International Journal of Self-Directed Learning*, vol. 7, no. 2, pp 2-20, retrieved from http://www.sdlglobal.com

Meyer, B. (2011) "Indledning", *Cursiv*, no. 8, pp 5-12.

Mor, Y., Craft, B. and Maina, M. (2015) "Introduction: Learning Design: Definitions, Current Issues and Grand Challenges". In: M. Maina, B. Craft and Y. Mor (Eds.), *The Art & Science of Learning Design*, Sense Publishers, Rotterdam, pp ix-xxvi.